BRITISH COLUMBIA
MINISTRY OF FORESTS and RANGE

Tree Farm Licence 15

Issued to Weyerhaeuser Company Ltd.

Rationale for Allowable Annual Cut (AAC) Determination

Effective August 3, 2005

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A/Deputy Chief Forester

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Objective of this Document

This document is intended to provide an accounting of the factors I have considered and the rationale I have employed in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for Tree Farm Licence (TFL) 15. This document also identifies where I believe new or better information is needed for incorporation into future determinations.

Description of the TFL

TFL 15 is located near the communities of Osoyoos, Oliver and Okanagan Falls in the south central region of the province. Weyerhaeuser Company Limited (the 'licensee') holds the TFL, which is administered by the Okanagan-Shuswap Forest District within the Southern Interior Forest Region.

The TFL area is situated within the Southern Interior ecoprovince and is characterised by a mixed topography of rolling hills and mountainous terrain ranging in elevation from 500 to 2200 metres. The productive forest lies within the Montane Spruce (MS), Engelmann Spruce Subalpine Fir (ESSF), Interior Douglas-fir (IDF), and Ponderosa Pine (PP) biogeoclimatic zones. The licence area supports a variety of commercial tree species including lodgepole pine, western larch, Douglas-fir, ponderosa pine, Engelmann spruce, and subalpine fir.

The total land base used in the analysis for TFL 15 is 46 369 hectares of which 42 763 hectares (92 percent) are considered productive forest. The remaining 3606 hectares (eight-percent) are composed largely of swamp, lakes, open range, non-productive brush and other areas that do not support commercial forest.

The timber harvesting land base (THLB) is 34 719 hectares. Within TFL 15, there are 64 hectares of Schedule A land, of which 53 hectares are in the THLB.

Forestry, agriculture, and tourism are the principal forms of economic activity in the region.

History of the AAC

TFL 15 was first issued to Oliver Sawmills Limited in 1954 as Forest Management Licence No. 1. During the term of Management Plan (MP) No. 1, the company was authorised to harvest 15 234 cubic metres per year from a total licence area of 55 210 hectares. The AAC increased significantly during subsequent MP periods largely as a result of the introduction of new provincial utilisation standards. In 1971, an AAC of 82 827 cubic metres was determined for a five-year period during which time a revised inventory of the TFL was initiated. Improved information from the new inventory led to a 9770 cubic metre reduction in the AAC in 1977. In 1978, the TFL was assigned to Weyerhaeuser Canada Limited following the amalgamation of several companies including Northwood Properties Limited, a successor to Oliver Sawmills. Weyerhaeuser Canada Limited changed its name to Weyerhaeuser Company Limited on May 1, 2000.

During the 1980s the AAC remained relatively constant at approximately 72 000 cubic metres from a total TFL area of 48 195 hectares. Because of a severe mountain pine beetle epidemic, the AAC was temporarily increased during the 1990s to accommodate salvage harvesting of affected stands; the AAC in 1992 and 1993 was 172 000 cubic metres and in 1994 was 137 000 cubic metres.

On January 1, 1995 the deputy chief forester decreased the AAC to 78 000 cubic metres and this was further decreased to 70 000 cubic metres on July 29, 1999.

New AAC determination

Effective August 3, 2005, the new AAC for TFL 15 will be 66 000 cubic metres, a reduction of 4000 cubic metres from the current AAC. This AAC will remain in effect until a new AAC is determined, which must take place within five years of this determination.

Information sources used in the AAC determination

Information considered in determining the AAC for TFL 15 includes the following:

- Management Plan No. 9 (MP No. 9) for TFL 15, submitted on March 26, 2004, approved July 27, 2004;
- Management Plan No. 9 Review Strategy; accepted November 28, 2002;
- Existing stand yield tables – accepted by the Ministry of Sustainable Resource Management (MSRM), Terrestrial Information Branch, June 28, 2003;
- Managed stand yield tables/Site Index – accepted by Ministry of Forests Research Branch, August 12, 2003;
- Information package (IP), submitted on March 27, 2003, accepted August 18, 2003;
- Timber supply analysis, submitted on November 7, 2003, accepted February 16, 2004;
- Twenty-year Plan, submitted on November 24, 2003, accepted March 3, 2004;
- Licence Replacement for TFL 15 – Dated August 1, 2004;
- *Okanagan Shuswap Land and Resource Management Plan*, Approved by Cabinet January 18, 2001;
- Order Establishing Provincial Non-Spatial Old Growth Objectives – Effective June 30, 2004;
- Summary of public input solicited by the licensee regarding contents of proposed MP No. 9 (MP No. 9, Section 12);
- Input received from First Nations through the information sharing process initiated by the licensee in June of 2003 and the consultation process initiated by the Ministry of Forests in March of 2005.

- First Nation Consultation Summary – TFL 15 Timber Supply Review, June 23, 2005
- *Osoyoos Archaeology Inventory Study, 2000*;
- Letter from the Deputy Ministers of Forests, and Environment, Lands and Parks, dated August 25, 1997, conveying government's objectives regarding the achievement of acceptable impacts of biodiversity management on timber supply;
- Memorandum from the Minister of Forests to the chief forester, dated February 26, 1996, stating the Crown's economic and social objectives regarding visual resources;
- Letter from the Minister of Forests to the chief forester, dated July 28, 1994, stating the Crown's economic and social objectives;
- *Forest and Range Practices Act,* 2002 and amendments;
- *Forest and Range Practices Regulations,* 2004 and amendments;
- *Forest Practices Code of British Columbia Act*, 1995 and amendments;
- *Forest Practices Code of British Columbia Act Regulations*, 1995 and amendments;
- *Forest Practices Code of British Columbia* Guidebooks;
- *Landscape Unit Planning Guide*, Province of BC, 1999;
- *Okanagan Timber Supply Area Analysis Report,* Ministry of Forests, July 2000;
- *TFL 15 Rationale for AAC determination*, Ministry of Forests, July 29 1999;
- *Procedures for Factoring Visual Resources into Timber Supply Analyses,* Ministry of Forests, March 1998;
- *Identified Wildlife Management Strategy Version 2004* (IWMS) — released June 2004;
- Field review of TFL 15 operating conditions and the associated discussions among Weyerhaeuser staff, the deputy chief forester and Ministry of Forests and Range (MOFR, formerly Ministry of Forests) regional, district and branch staff, March 9, 2005.
- Technical review and evaluation of current operating conditions through comprehensive discussions with MOFR, the Ministry of Environment (MoE, formerly Ministry of Water, Land, and Air Protection (MWLAP)) and the former MSRM staff including the AAC determination meeting held in Victoria on May 5, 2005.

Role and limitations of the technical information used

Section 8 of the *Forest Act* requires the chief forester to consider biophysical as well as social and economic information in AAC determinations. A timber supply analysis, and the inventory and growth and yield data used as inputs to the analysis, typically form the major body of technical information used in AAC determinations. Timber supply analyses and associated inventory information are concerned primarily with biophysical factors—such as the rate of timber growth and definition of the land base considered available for timber harvesting—and with management practices.

However, the analytical techniques used to assess timber supply are simplifications of the real world. There is uncertainty about many of the factors used as inputs to timber supply analysis due in part to variations in physical, biological and social conditions, although ongoing science-based improvements in the understanding of ecological dynamics will help reduce some of this uncertainty.

Furthermore, technical analytical methods such as computer models cannot incorporate all of the social, cultural and economic factors that are relevant when making forest management decisions. Therefore, technical information and analysis do not necessarily provide the complete answer or solution to forest management problems such as AAC determination. The information does, however, provide valuable insight into potential impacts of different resource-use assumptions and actions, and thus forms an important component of the information I must consider in AAC determinations.

In making the AAC determination for TFL 15, I have considered known limitations of the technical information provided, and I am satisfied that the information provides a suitable basis for my determination.

Statutory framework

Section 8 of the *Forest Act* requires the chief forester to consider particular factors in determining AACs for timber supply areas (TSAs) and TFLs. Section 8 is reproduced in full as Appendix 1.

In accordance with Section 23(3) of the *Interpretation Act*, the deputy chief forester is expressly authorised to carry out the functions of the chief forester, which include those required under Section 8 of the *Forest Act*.

The chief forester has expressed the importance of consistency of judgement in making AAC determinations. I also recognise the need for consistency of approach and am familiar with the guiding principles that the chief forester has employed in making AAC determinations. I find these principles to be reasonable and appropriate and I have employed them as described below in making my AAC determination for TFL 15.

Guiding principles for AAC determinations

Rapid changes in social values and in our understanding and management of complex forest ecosystems mean that there is always uncertainty in the information used in AAC determinations. In making the large number of periodic determinations required for British Columbia's many forest management units, administrative fairness requires a reasonable degree of consistency of approach in incorporating these changes and uncertainties. To make my approach in these matters explicit, I have set out the following body of guiding principles. In any specific circumstance where I may consider it necessary to deviate from these principles, I will explain my reasoning in detail.

Two important ways of dealing with uncertainty are

(i) minimizing risk, in respect of which in making AAC determinations, I consider particular uncertainties associated with the information before me, and attempt to assess and address the various potential current and future social, economic and environmental risks associated with a range of possible AACs; and

(ii) redetermining AACs frequently, to ensure they incorporate current information and knowledge -- a principle that has been recognized in the legislated requirement to redetermine AACs every five years. The adoption of this principle is central to many of the guiding principles that follow.

In considering the various factors that Section 8 of the *Forest Act* requires the chief forester to take into account in determining AACs, I intend to reflect as closely as possible operability and forest management factors that are a reasonable extrapolation from current practices. It is not appropriate to base my decision on unsupported speculation with respect either to factors that could work to *increase* the timber supply—such as optimistic assumptions about harvesting in unconventional areas, or using unconventional technology, that are not substantiated by demonstrated performance—or to factors that could work to *reduce* the timber supply, such as integrated resource management objectives beyond those articulated in current planning guidelines or the *Forest Practices Code of British Columbia* – which is now in transition to the *Forest and Range Practices Act.*

In many areas, the timber supply implications of some legislative provisions, such as those for landscape-level biodiversity, still remain uncertain, particularly when considered in combination with other factors. In each AAC determination the chief forester takes this uncertainty into account to the extent possible in the context of the best available information. In making my determination for TFL 15, as deputy chief forester, I have followed the same approach.

As British Columbia progresses toward completion of strategic land-use plans, in some cases the eventual timber supply impacts associated with the land-use decisions resulting from the various regional and sub-regional planning processes remain subject to some uncertainty before formal approval by government. In determining AACs, I will not speculate on timber supply impacts that may eventually result from land-use decisions not yet finalized by government.

In some cases, even where government has made a formal land-use decision, it is not necessarily possible to analyze and account for the full timber supply impact in a current AAC determination. Many government land-use decisions must be followed by detailed implementation decisions requiring, for instance, the establishment of resource management zones and resource management objectives and strategies for those zones. Until such implementation decisions are made it would be impossible to assess in full the overall impacts of land-use decisions. In such cases, the legislated requirement for frequent AAC reviews will ensure that future determinations address ongoing plan implementation decisions. Whenever specific protected areas have been designated by

legislation or order-in-council, these areas are deducted from the timber harvesting land base and are not considered to contribute any harvestable volume to the timber supply in AAC determinations, although they may contribute indirectly by providing forest cover to help in meeting resource management objectives such as biodiversity.

When appropriate, I will consider information on the types and extent of planned and implemented intensive silviculture activities as well as relevant scientific, empirical and analytical evidence on the likely magnitude and timing of their timber supply effects.

Some have suggested that, given the large uncertainties present with respect to much of the data in AAC determinations, any adjustments in AAC should wait until better data are available. I agree that some data are not complete but this will always be true where information is constantly evolving and management issues are changing. Moreover, in the past, waiting for improved data created the extensive delays that resulted in the urgency to redetermine many outdated AACs between 1992 and 1996. In any case, the data and models available today are superior to those available in the past, and will undoubtedly provide for more reliable determinations.

Others have suggested that, in view of data uncertainties, the chief forester should immediately reduce some AACs in the interest of caution. However, any AAC determination made by the chief forester or myself must be the result of applying our individual judgement to the available information, taking any uncertainties into account. Given the large impacts that AAC determinations can have on communities, no responsible AAC determination can be made solely on the basis of a response to uncertainty. Nevertheless, in making my determination, I may need to make allowances for risks that arise because of uncertainty.

With respect to First Nations' issues, I am aware of the Crown's legal obligations resulting from decisions in recent years made by the Supreme Court of Canada. I am aware of the Crown's legal obligation to consult with First Nations regarding asserted rights and title in a manner proportional to the strength of their claimed interests and the degree to which the decision may impact these interests. In this regard, I will consider any information brought forward respecting First Nations' aboriginal interests, including operational plans that describe forest practices to address First Nations' interests.

The AAC that I determine should not be construed as limiting the Crown's obligations under the Court's decisions in any way, and in this respect it should be noted that my determination does not prescribe a particular plan of harvesting activity within TFL 15. It is also independent of any decisions by the Minister of Forests and Range with respect to subsequent allocation of wood supply.

Overall, in making AAC determinations, I am mindful of my obligation as steward of the forest land of British Columbia, of the mandate of the Ministry of Forests and Range as set out in Section 4 of the *Ministry of Forests Act*, and of my responsibilities under the *Forest Practices Code of British Columbia Act* (the Code) and under the *Forest and Range Practices Act*.

Because the new regulations of the *Forest and Range Practices Act* are designed to maintain the integrity of British Columbia's forest stewardship under responsible forest practices, it is not expected that the implementation of the legislative changes will significantly affect current timber supply projections made using the Code as a basis for the definition of current practice.

The role of the base case

In considering the factors required under Section 8 of the *Forest Act* to be addressed in this AAC determination, I am assisted by timber supply forecasts provided to me as part of the Timber Supply Review program.

For each AAC determination for a TFL, a timber supply analysis is carried out using an information package including data and information from three categories: land base inventory, timber growth and yield, and management practices. Using these data and a computer model, a series of timber supply forecasts is produced, reflecting different starting harvest levels, rates of change over time, and potential trade-offs between short- and long-term harvest levels.

From this range of forecasts, one is chosen which attempts to avoid excessive changes from decade to decade and significant timber shortages in the future, while ensuring the long-term productivity of forest lands. This is known as the 'base case' forecast, and forms the basis for comparison when assessing the effects of uncertainty on timber supply.

Because it represents only one in a number of theoretical forecasts, and because it incorporates information about which there may be some uncertainty, the base case forecast for a TFL is not a portrayal of AACs over time. Rather, it is one possible forecast of timber supply, whose validity — as with all the other forecasts provided — depends on the validity of the data and assumptions incorporated into the computer simulation used to generate it. In some cases, an AAC is determined that coincides with the base case starting point. In other cases, an AAC is determined which differs significantly from the modeled starting point.

Therefore, much of what follows in the considerations outlined below is an examination of the degree to which the assumptions made in generating the base case forecast are realistic and current, and the degree to which I believe its predictions of timber supply should be adjusted to reflect the current situation properly.

These adjustments are made on the basis of informed judgement, using current available information about forest management, which may well have changed since the original information package was assembled. Forest management data are particularly subject to change during periods of legislative or regulatory change, or during the implementation of new policies, procedures, guidelines or plans.

Thus it is important to remember, in reviewing the considerations which lead to the AAC determination, that while the timber supply analysis with which I am provided is integral to those considerations, the AAC determination itself is not a calculation but a synthesis of judgement and analysis in which numerous risks and uncertainties are weighed. Depending upon the outcome of these considerations, the AAC determined may or may not coincide with the initial harvest level in a base case forecast. Judgements that may in part be based on uncertain information are essentially qualitative in nature and, as such, subject to an element of risk. Consequently, once an AAC has been determined, no additional precision or validation may be gained by attempting a computer analysis of the combined considerations to confirm the exact AAC determined.

Timber supply analysis

Licensee staff prepared the timber supply analysis for TFL 15 using the WOODSTOCK timber supply model, which is a non-spatial, optimization model. Optimization models employ a mathematical algorithm to find an optimal harvest forecast based on specific objectives, constraints, and data. Non-spatial models approximate the timber supply impacts of implementing spatial restrictions using forest cover objectives, rather than tracking the spatial relationship between cutblocks.

The licensee used the spatially-explicit, simulation version of the COMPLAN timber supply model to generate the 20-year plan. Simulation models project the outcome of a specific schedule of management activities, constraints, and assumptions. Spatially explicit in this case means that the model accounts for the spatial relationship between mapped cutblocks.

Based on the expertise of MOFR staff in reviewing results from these models for AAC determinations, I am satisfied that both models are capable of providing a reasonable projection of timber supply.

The base case in this analysis had an initial harvest level of 66 570 cubic metres per year, which was approximately 3500 cubic metres (five percent) less than the current AAC of 70 000 cubic metres. In the base case, a non-declining harvest level of 66 570 cubic metres was maintained for 80 years, after which the harvest increased to approximately 84 000 cubic metres per year. At 150 years, the harvest increased again until a long-term harvest level of 111 448 cubic metres per year was attained. A non-declining flow at the current AAC of 70 000 cubic metres was not feasible.

As discussed throughout this rationale, and in consideration of the items described above, I am satisfied that the information presented to me provides an adequate basis from which I can assess the timber supply for TFL 15 for this determination. However, for subsequent determinations, I advise the licensee to provide supplementary information that serves to validate its technique of adjusting yield tables to account for various areas typically excluded when deriving the THLB. This supplementary information should confirm if both approaches have the same effect on modeled timber flow.

Consideration of Factors as Required by Section 8 of the *Forest Act*

Section 8 (7)

In determining an allowable annual cut under this section the chief forester, despite anything to the contrary in an agreement listed in section 12, must consider

(a) the rate of timber production that may be sustained on the area, taking into account

(i) the composition of the forest and its expected rate of growth on the area.

In this document, I will not discuss factors which I consider to have been appropriately accounted for in the base case and with which I have no concern, namely those for non-forest, non-productive forest, low productivity areas, problem forest types, non-merchantable forest types, terrain stability, dry NDT 4 sites, and the modelled harvest profile.

Land base contributing to timber harvest

To derive the THLB for the timber supply analysis, the licensee deducted certain areas from the productive forest land base. These deductions account for the factors that effectively reduce the suitability or availability of the productive forest area for harvest, for ecological, economic or social (e.g., parks) reasons. Each assumption has been explicitly documented in the licensee's information package and timber supply analysis.

In MP No. 8, the total area of TFL 15 was 48 448 hectares. In MP No. 9, the total area is 46 369 hectares due to two new protected areas: Vaseux Canyon and Shuttleworth Creek, identified in the Okanagan Shuswap Protected Area Strategy, account for 2144 hectares removed from TFL 15. As well, the boundary between TFL 15 and the Arrow-Boundary Forest District is uncertain and will be re-drawn. Southern Interior Forest Region staff estimate that the difference will amount to about 50 hectares.

Existing forest cover inventory

In 1996, staff from the former Ministry of Forests Resources Inventory Branch (RIB) conducted an inventory audit of TFL 15, which showed that the volume of stands over age 60 years in the inventory were overestimated by 18 percent. In 1997, a phase I vegetation resources inventory (VRI) was completed and was accepted by RIB in 1998. In 1999, RIB retro-fitted the inventory audit samples onto the 1997 VRI and the results indicated that existing stand volumes were over-estimated by 20 percent. The licensee questioned the accuracy and validity of the procedure.

The Timber Supply Review (TSR) II analysis showed that short-term timber supply was very sensitive to changes in existing stand volume. In the 1999 determination, the deputy chief forester acknowledged the uncertainty in the inventory audit results and strongly recommended that the licensee complete a phase II VRI.

The phase II VRI was initiated in 2000 and completed in 2002. The inventory followed standard sampling procedures. Data were also collected in an attempt to reduce standard error and to stratify the dry-belt areas of the TFL. However, for net merchantable volume the sampling error at the 95 percent confidence interval was still 18 percent, which is three percent higher than normally accepted by MSRM for timber supply review.

The licensee used procedures to adjust the inventory that were not acceptable to MSRM. The licensee adjusted age, height and volume according to accepted procedures, however, among other non-standard procedures, it drew estimates from the entire forest including stands less than 50 years old that were modeled in the analysis as managed lands. In addition, the licensee used only "net factoring" rather than net volume adjustment factors (NVAF) to adjust the inventory for stand defects. Based on these adjustments, the licensee applied a nine percent reduction in the analysis to stands greater than 50 years old.

MSRM staff reviewed the phase II data and observed that stand volume tended to be underestimated for young stands and overestimated for mature stands. They calculated that for stands in age class 4 to 9 (greater than 60 years of age) the VRI adjustment factor was five percent. With an *estimated* NVAF of four percent, the total adjustment was nine percent. This was coincidentally the same as the licensee's correction factor, but the two analyses were very different, as were the conclusions.

Because of the high sampling error, sensitivity analysis was performed varying the existing volume estimates by five percent. Increasing existing volumes by five percent resulted in a short-term increase of 8.7 percent to 72 370 cubic metres per year; however, decreasing the existing volumes by five percent resulted in a short-term decrease of 27.6 percent to 48 150 cubic metres per year. The sensitivity analysis revealed that short-term timber supply was highly sensitive to small changes in existing growing stock. The 20-year plan, which was accepted on March 4, 2004, indicated that the base case harvest level was achievable.

Since the 1996 inventory audit, there has been an ongoing challenge to reduce the uncertainty in the estimate of merchantable volume, assumptions that are critical in the short term. MSRM has reviewed the licensee's estimates and made recommendations to address weak relationships, but I still observe evidence of continuing uncertainty. Analysis demonstrates the high sensitivity in the short-term timber supply to minor (±5 percent) variations in these estimates. Before the next determination, I strongly encourage the licensee to undertake work to improve the confidence in merchantable volume estimates in order to reduce uncertainty, preferably using standard sampling approaches. For this determination, I accept the existing stand volume estimates as modeled in the base case.

Estimates for roads, trails, and landings

In the base case, a percentage of the productive forest was excluded from the THLB to account for the loss of productive area resulting from the construction of roads, trails, and landings. Separate estimates were made for both existing and future roads, trails, and landings, to reflect current access as well as anticipated road network requirements.

Current roads

According to the licensee, the road updates in the inventory are current and road building on TFL 15 is complete. The licensee identified a total of 977.5 kilometres of roads from its Geographic Information System (GIS) database. A 17-metre width was assumed for main roads, nine metres for operational roads, and five metres for trails, which resulted in 775 hectares of existing permanent roads excluded from the THLB. However, the area of roads derived during processing of the inventory files for the WOODSTOCK (Timber Supply Analysis) and COMPLAN (20-year plan) models was 655 hectares. The licensee thought the difference of 120 hectares to have resulted from mapping procedures used in GIS.

The licensee accounted for the 120-hectare difference by reducing the existing stand yield tables by 0.28 percent (see my comment about volume versus area adjustments on page 9). It is assumed that the area is within the productive forest and spread amongst all sites without any bias.

Landings

In the MP No. 8 Information Package, landings built prior to 1996 covered 361 hectares, which represent approximately 0.8 percent of the current productive forest land base. The licensee estimated that pre-Code, unmapped, construction of permanent access has reduced the productive forest by an additional one percent. The licensee assumed the total 1.8 percent to be located across the productive forest without any bias. Therefore in the base case, the licensee applied 1.8 percent as a volume reduction to yield tables that were produced under the silvicultural management regimes applied on the TFL from 1955 to 1995 (see my comment about volume versus area adjustments on page 9). The licensee's current silvicultural prescriptions commit to rehabilitating 100 percent of all landings and in-block disturbance.

Data from post-Code silviculture prescriptions identified 4.2 percent of each block as non-productive following harvesting activities. This number included a post-Code phase-in period during which 50 percent of rehabilitated landings and trails were included in permanent non-productive area. Current practice of roadside harvest systems decreases the loss of productive area. Although no data exist, the licensee estimated the loss to be three percent. The licensee indicated success at restoring 90 percent of landing areas to a 60 percent recovery of productivity.

Using these estimates in the base case, net volume loss was calculated to be 1.38 percent. This loss was assumed across all sites without bias and was applied to stands harvested from 1996 onwards and into future regeneration yield tables.

Within-block disturbance

Within-block disturbance was not included as a specific productivity loss in the base case. This was concluded from measuring productivity during the site index adjustment (SIA) project in which no change in productivity was observed.

The licensee notes its commitment to addressing small/dispersed disturbance through prompt site preparation and planting. I have accounted for stocking-related impacts under OAF 1 (see below).

Future roads

Main access on TFL15 is complete and any future roads will be in either the operational or trail class. The licensee assumed that 50 percent of the existing permanent structures would be required for future harvesting activities. The licensee estimated that post-Code road losses to be three percent and that new permanent structures would result in a 1.5 percent loss of productive land. The licensee assumed that these permanent structures would be located within the productive forest land base across all sites without bias. Therefore, the licensee applied a 1.5 percent volume reduction (equivalent to the assumed loss in area) to all future regeneration yield curves (see my comment about volume versus area adjustments on page 9).

I have reviewed the procedures used to account for roads, trails and landings in the base case, and I accept them for this determination. I recommend that the licensee monitor and validate the current practice of roadside harvesting to confirm the assumption that the non-productive area has decreased from 4.2 to 3 percent, and to report the findings in time for the next determination.

Riparian reserves and management areas

Riparian areas occur along streams, and around lakes and wetlands. The *Forest Practices Code Act of British Columbia – Operational and Site Planning Regulation* requires the establishment of riparian reserve zones (RRZs), which exclude timber harvesting, and riparian management zones (RMZs), which restrict harvesting, to protect riparian and aquatic habitats.

Within TFL 15, all streams have been classified. The licensee determined riparian reserve and management zone boundaries by assigning zone widths following *Forest Practices Code Operational Planning Regulations* to each reach/class combination. To account for overlaps in riparian zones, the licensee delineated a hierarchy for reserve and management zones: streams 1st, lakes 2nd and wetlands 3rd, and calculated the gross area for each. Based on 50 percent retention in management zones for lakes and S2 – S3 streams, 30 percent retention for S4 streams, and 25 percent retention for S5 streams, the licensee converted the gross area to an effective basal area retention area of 355 hectares. This resulted in a gross land base reduction of 0.77 percent, which was further reduced to

be applicable only to the THLB (73 percent of productive forest). Therefore, a 0.56 percent (0.77 times 0.73) reduction factor was applied to all yield tables (see my comment about volume versus area adjustments on page 9). If, as the licensee asserts, riparian zones are evenly distributed across the total land base, the volume reduction factor should be the same, 0.77 percent, for every hectare regardless of its location. I therefore conclude that the volume reduction factor should not have been reduced to account for the proportion of the total land base that is THLB.

Enhanced riparian reserves

The Okanagan Shuswap Land and Resource Management Plan (LRMP) applied additional protection to riparian values through an incremental area to be set aside as 'Enhanced Riparian Reserves'. For TFL 15, this amounted to 228 hectares. The licensee assumed the area to be located within the productive forest land base without bias across site and calculated a 0.53 percent volume reduction applied to all yield tables (see my comment about volume versus area adjustments on page 9).

Lakes

Solco Lake is a "Class B Lake" at the headwaters of the Vaseux Creek drainage. The licensee plans to prepare operational plans adjacent to this lake and the Vaseux drainage, which recognises the fisheries and wildlife values identified in the Okanagan Shuswap LRMP. Furthermore, the licensee will prescribe riparian protection consistent with the "Acts and Regulations."

Okanagan-Shuswap Forest District staff note that there are constraints to harvesting in the management zone around the lake that were not incorporated into the base case assumptions, but the lake is so small that these would have an insignificant impact on the base case forecast.

I have reviewed the procedures used to account for riparian reserve and management areas and enhanced riparian reserves in the base case and note a minor inaccuracy in the assumptions. For the former, the reduction should have been 0.77 percent not 0.56 percent. I have revisited the sensitivity analysis, which showed the effect on timber supply of reducing the THLB, and conclude that this inaccuracy will have negligible impact on the base case harvest projection. For this determination, I therefore accept the assumptions as modeled.

Silvicultural Eras – Basis for Yield Table Development

The licensee has identified three distinct silvicultural eras differentiated by regeneration, harvest system, protection and non-timber resource management strategies. The eras are described below.

Era 1 covers management strategies employed in MPs No.1, 2 and 3, from 1955 to 1974. In this era, the focus was road development for harvesting and protection, and reliance on natural regeneration for both clear cutting and diameter limit cutting silvicultural systems. Experimental planting started late in this era, and regeneration delay varied between five and ten years (average of seven years applied in the base case).

Era 2, covering MPs No.4, 5, 6, and 7, occurred from 1975 to 1995. In this era, a planting program in spruce and spruce-leading forest types was gradually expanded to include pine types. Reliance on natural regeneration diminished in clearcut systems but remained the dominant strategy in diameter-limit and fallers' choice systems. Site preparation was used throughout the TFL. Not-satisfactorily-restocked (NSR) area was recognized and treated and some Integrated Resource Management (IRM) objectives incorporated. Regeneration delay varied from two to five years (average of two years for planted stock and three years for natural regeneration was applied in the base case).

Era 3 extends from 1996 onwards and covers management strategies employed in MPs No.7, 8, and 9. As a result of the Forest Practices Code, a patch cutting/planting program was introduced within the dry belt portion of the TFL, and IRM strategies and tactics were incorporated into road construction and harvesting practices. Prompt site preparation and planting resulted in regeneration delay averaging one year for planted stock and three years for natural regeneration.

I will reference these silvicultural eras in subsequent discussions.

Site index

Inventory data include estimates of site productivity for each forest stand, expressed in terms of a site index. The site index is based on the stand's height as a function of its age. The productivity of a site largely determines how quickly trees grow. This in turn affects the time seedlings will take to reach green-up conditions, the volume of timber that can be produced, and the ages at which a stand will satisfy mature forest cover requirements and reach a merchantable size.

In January 2001, the licensee completed level 4 Terrestrial Ecosystem mapping (TEM) to 1998 standards, which was reviewed and accepted by the former Ministry of Forests Regional and Research Branch staff. However, the Research Branch growth and yield review (August 12, 2003) found that the TEM inventory did not meet Level 4 criteria. Nonetheless, Research Branch accepted it for use in the analysis for MP No. 9 as the best available information.

In the base case, the licensee used inventory-based site indices for all stands greater than 47 years old. For stands less than 48 years old and for stands regenerated in the future, the licensee derived new site indices based on TEM and a Site Index Adjustment (SIA) project. Research Branch staff reviewed and accepted the SIA report in August 2003.

Preliminary potential site index estimates in the SIA project for each site series in TFL 15 were linked to each TEM polygon and merged with the forest cover data. The resultant estimates were used as site indices for the existing and future regeneration yield curves in the MSdm1, IDFdm1 and ESSFdc1 below 1820 metres elevation. The suggested Provincial SIBEC reduction was applied to the ESSFdc1 above 1820 metres elevation. Provincial SIBEC data for interior Douglas-fir and Ponderosa pine were used in the IDFxh1 and PPxh1.

Some uncertainty exists about applying provincial site index conversion equations to local conditions for interior Douglas-fir and spruce. The licensee, therefore, conducted a sensitivity analysis to determine the effect on timber supply of increasing and decreasing the site index by one metre for interior Douglas-fir and spruce leading forest types with site indices greater than 15 metres. Reducing site index by one metre decreased the short-term harvest level by 110 cubic metres per year. Increasing site index by one metre had no impact on the short-term harvest level but increased mid- and long-term harvest levels slightly.

Research Branch staff accepted the site indices applied in the base case on August 12, 2003.

I have reviewed the procedures used to determine site index in the base case and I accept them for this determination. However, I encourage the licensee to localize site index equations for interior Douglas-fir and spruce to reduce the uncertainty about the applicability of provincial conversion equations.

Natural stands yields

In the base case, natural stand yields tables (NSYT) were modeled using Variable Density Yield Prediction (VDYP) version 6.6b with area-weighted inputs from the inventory for each analysis unit. NSYTs were applied to stands greater than 47 years old. Yields were reduced for decay, waste and breakage using VDYP default factors for TFL 15. Deciduous volumes were included in the NSYTs but these volumes were deducted in the timber supply model.

The licensee provided MSRM Resource Information Branch with a Timber Volume Check that showed the total volume of timber on the THLB using analysis unit yield table volumes to be one percent greater than when inventory volume for each polygon was used to calculate this estimate. Residual stands had been assigned an incorrect stocking class (0) that contributed to the overestimate, but the area involved was insignificant.

To account for the results of the inventory audit described under "Inventory" above, the licensee reduced the analysis unit yield table volumes for existing stands (greater than 47 years old) by nine percent. However, MSRM staff cautioned that using the single ratio risked not addressing important trends in volume differences by age. The licensee has further reduced the NSYT volumes to account for roads and landings, retention in the riparian management zone, enhanced riparian reserves, and wildlife tree patches. The overall reduction factor applied to the VDYP yield tables was 15.7 percent.

The licensee provided a sensitivity analysis showing the effect on timber supply of increasing and decreasing VDYP volumes by five percent. The MOFR Forest Analysis and Inventory Branch (FAIB) staff contend that reducing NSYTs by five percent does not provide a true picture of the risk of not realizing the volumes modeled in the base case. Two factors likely influenced the result: 1) the short-term harvest is dependent on the period with the least available timber supply because of the non-declining harvest flow requirement; and 2) there is no look-ahead capability in the WOODSTOCK model.

To show the interactions between volume estimates and minimum harvest volumes, the licensee provided a sensitivity analysis showing the effect on timber supply of reducing existing stand volumes by five percent and the minimum harvest volume for mature stands only by 25 cubic metres per hectare. This analysis decreased the effect on the forecast of the absence of a look-ahead function in WOODSTOCK. The resulting forecast predicted a harvest level of 60 900 cubic metres per year, a drop of 8.5 percent. This is in line with expectations.

MSRM accepted NSYTs for use in the TFL 15 analysis.

Except for a slight underestimate in yield table volumes that I will account for under 'utilization standards', the NYSTs used in the base case for TFL 15 are best available information, and I therefore accept the estimates used for this determination.

Managed stand yields

Managed stand yield tables (MSYT) cover all future regenerated stands and existing stands less than 48 years old. The tables are based on silvicultural eras and differ for future and existing managed stands. The licensee used TIPSY (Table Interpolation Program for Stand Yields) version 3.0 to produce yield tables.

For existing regeneration, area-weighted averages were calculated by analysis unit based on site index, stems per hectare, projected age and height, and percent species. Site index was adjusted using the estimates from the TEM/SIA projects. For future regeneration, yield tables (analysis units) were developed using groupings from silviculture era 3 for site series and leading species. The licensee reduced the yield table volumes to account for various factors described in detail under the appropriate headings in this document (e.g. roads, trails and landings).

The licensee provided a sensitivity analysis showing the effect on timber supply of increasing and decreasing the managed stand yield estimates applied in the base case by ten percent. An increase of ten percent had minimal effect in the short term but a decrease of ten percent decreased short-term supply by approximately 4000 cubic metres.

I have reviewed the assumptions used in the base case as well as the associated sensitivity analysis. Except for a slight underestimate in yield table volumes that I will account for under 'utilization standards', I accept the managed stand yield estimates applied in the base case as the best available information for this determination.

Operational adjustment factors (OAFs)

TIPSY projections are initially based on ideal conditions, assuming full site occupancy and the absence of pests, diseases, and significant brush competition in the stand. Certain operational conditions, such as less than ideal tree distribution, small non-productive areas, endemic pests and diseases, or age dependent factors such as decay, waste, and breakage cause actual yields to be less than the theoretical TIPSY yields over time. To account for the loss of timber volume due to operational conditions, the licensee applied Operational Adjustment Factors (OAFs) to the yield projections for regenerated stands before using them in the timber supply analysis. The licensee used the following definitions for the components of OAF 1: unmapped non-productive stand openings, yield loss attributed to imperfect tree distribution, endemic losses and other random risk factors. OAF 2 reflects age-related losses in volume.

In the information package, the licensee provided a detailed accounting of the methods used to estimate the yield reductions associated with each component of OAF 1 for each silviculture era.

In total, the losses from all sources for silviculture eras 1 and 2 amounted to 15.4 percent for lodgepole pine, 13 percent for spruce, 9.9 percent for interior Douglas-fir and 9.4 percent for western larch. For silvicultural era 3, the total loss estimate for lodgepole pine was10 percent, hybrid spruce 11 percent, interior Douglas-fir 8.4 percent, and western larch 7.9 percent.

The licensee developed OAF 2 estimates from the report "1976 Metric Diameter Class Decay, Waste and Breakage Factors, All Inventory Zones". Based on a review of tree diameters at age 100 years, the licensee assumed that 60 percent of the trees in each stand would be in risk group 1 with lower loss factors and 40 percent in risk group 2 with higher loss factors. The licensee further assumed that 50 percent of stands would be in the 25-centimetre, and 50 percent in the 30-centimetre diameter class. The resulting weighted average OAF 2 applied to the MSYTs by species in the base case were 3.3 percent for lodgepole pine, 4.0 percent for western larch, 3.0 percent for ponderosa pine, 3.9 percent for interior Douglas-fir, and 3.8 percent for spruce.

Research Branch staff accepted the licensee's estimates for OAF 1 and OAF 2 for use in the base case. Okanagan Shuswap Forest District staff advised that the OAF 1 used in the base case may not adequately account for mistletoe damage in Douglas-fir, lodgepole pine and larch stands. However, no information is currently available to substantiate this concern.

I have reviewed the OAFs applied in the base case and note that assumptions about forest health losses and the effects of management practices such as stocking survey methods need to be monitored and the findings reflected in OAF assumptions for the next timber supply review. However, in the absence of information contradicting the licensee's estimates, I accept the licensee's assumptions for the purposes of this determination.

Minimum harvestable ages

Minimum harvestable age is an estimate of the earliest age at which a stand has grown to a harvestable condition. Changing the minimum harvestable age generally affects when second growth stands will be available for harvest and, accordingly, how quickly existing stands may be harvested. In practice, many forest stands will be harvested at much older ages than the minimum due to constraints on harvesting which arise from managing for other forest values such as visual quality, wildlife and water quality.

In the TFL 15 timber supply analysis, the licensee combined diameter information from VDYP and TIPSY with professional judgement, special cruise and appraisal cruise data to determine minimum stand criteria for operationally feasible harvestable stands. For the timber supply model, these minimum criteria were expressed in volume per hectare (rather than age) and ranged from 140 cubic metres per hectare for stocking class four lodgepole pine stands to 275 cubic metres per hectare for existing regenerated subalpine fir leading stands.

I have reviewed the assumptions used in the base case and acknowledge that predicting when stands may be harvested in the future is difficult and subject to considerable uncertainty. I note that the licensee's sensitivity analysis showed that short-term timber supply is very sensitive to a 25-cubic-metre-per-hectare change in the assumed minimum volume per hectare. Further, I note that as a result of the yield table reductions applied to account for factors that would more appropriately have been accounted for using land base reductions (e.g. roads, trails and landings), actual stand volumes are greater than those projected in the model. It is difficult to estimate the impact on the harvest forecast if land base reductions instead of volume reductions had been applied to account for areas that are unavailable for harvest. The effects on timber supply of a smaller land base resulting from applying land base reductions and the increase in volume per hectare and consequent availability of stands for harvest are currently unknown.

For this determination I accept the information concerning minimum harvest volumes as presented in the base case. However, I strongly recommend that the licensee review the methods for accounting for minor land base reductions with the aim of reducing this uncertainty for the next timber supply review.

(ii) the expected time that it will take the forest to become re-established on the area following denudation:

Not-satisfactorily-restocked areas and impediments to regeneration

I have reviewed the information regarding not-satisfactorily–restocked (NSR) areas and impediments to regeneration and am satisfied that the assumptions for these factors in the base case were appropriate.

Regeneration delay

Regeneration delay is the period between harvesting and the time at which an area becomes occupied by a specified minimum number of acceptable, well-spaced seedlings. Based on silvicultural era, the regeneration delays assumed in the base case were seven years for naturals in era 1; three years for naturals in eras 2 and 3; and two and one year for planted in eras 2 and 3 respectively.

Okanagan-Shuswap Forest District staff found that the intended regeneration delays adequately reflect current practice but cautioned that the licensee is placing an increased reliance on natural regeneration and that high density stands sometimes need seven years to regenerate.

I have reviewed and accept the regeneration delay assumptions in the base case and note that these accurately reflect current practice, but expect that any shifts in practices will be reflected in the assumptions for the next timber supply review.

(iii) silvicultural treatments to be applied to the area:

Silvicultural treatments

I have reviewed the information regarding the use of silvicultural systems, regeneration, tree breeding gains, juvenile spacing, commercial thinning, fertilization, and rehabilitation for TFL 15. I understand that the latter three practices are currently not employed on the TFL. I am satisfied that the base case assumptions for these factors were appropriate.

(iv) the standard of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area:

Decay, waste and breakage

I have reviewed the information regarding decay, waste and breakage factors assumed in the analysis for TFL 15, and I am satisfied that this factor was appropriately modeled. The deductions accounting for timber utilization standards are discussed below.

Utilization standards

Utilization standards define the species, dimensions and quality of trees that must be harvested and removed from an area during harvesting operations. These standards were incorporated into the timber supply analysis to estimate minimum merchantable stand volume for existing and regenerating stands.

In the base case for TFL 15 current interior utilization standards were assumed for all species. The licensee indicates that in practice spruce, subalpine fir and lodgepole pine stands are harvested to a 25-centimetre stump height rather than the 30-centimetre height assumed in the base case. District staff agree this is current practice. In the base case the

licensee inadvertently omitted the associated one-percent increase in yield table volumes for these three species.

I acknowledge that the utilization standards regarding the minimum diameters used in the timber supply analysis reasonably reflect current practice and note that the lowered stump height was not reflected in the yield tables which has lead to a small underestimate in timber supply over the forecast period. I will discuss this further under 'Reasons for decision'.

(v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production:

Integrated resource management objectives

The Ministry of Forests and Range is required under the *Ministry of Forests Act* to manage, protect and conserve the forest and range resources of the Crown and to plan the use of these resources so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realisation of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated. Accordingly, the extent to which integrated resource management (IRM) objectives for various forest resources and values affect timber supply must be considered in AAC determinations.

I have reviewed the information regarding archaeological sites, recreation, range, visually sensitive areas, watersheds, adjacency constraints, and landscape-level biodiversity, and I am satisfied that these factors were appropriately modelled in the base case. Other IRM objectives will be discussed below.

– *Wildlife habitat*

Areas within TFL 15 support large mammal species including mule deer, bighorn sheep and elk as well as various birds, reptiles, amphibians and invertebrate species. The *Okanagan Shuswap Land and Resource Management Plan* (LRMP) provides direction for wildlife management. Six Resource Management Zones (RMZ) identified in the LRMP are within TFL 15: Mule Deer Winter Range, Bighorn Sheep, Elk Habitat, Moose Winter Habitat, Mountain Goat Habitat, and Vaseux Drainage Fish and Aquatic Habitat.

1. Mule Deer Winter Range

In TLF 15, the Mule Deer Winter Range (MDWR) RMZ comprises a total of 9950 hectares. Based on the LRMP, in this RMZ, 33 percent of the forested area in the moderate snow pack zone and 15 percent of the forested area in the shallow snow pack zone are to be maintained for snow interception cover. Furthermore, stands that will provide snow interception on the THLB are defined as those with Douglas-fir greater than 40 cm diameter at breast height or 175 years old, whichever is reached first (except in the IDFxh, where it is 140 years old). In the non-THLB, appropriate stands are defined as those greater than 120 years old.

Former MWLAP staff provided the licensee with area-weighted snow interception retention requirements for each MDWR planning cell. According to the LRMP, up to 50 percent of the snow interception cover could be located in the non-THLB and the remainder located where the best combination of attributes exists.

The MDWR RMZ overlaps about 4600 hectares of the visual management zone, and for this area, in the base case the licensee applied both constraints for the visual zone and for snow interception cover. Constraints specific to the MDWR RMZ were applied on the remaining 5350 hectares.

In the base case, the licensee assumed snow interception would be attained with stands aged 120 years old in both THLB and non-THLB areas and that 50 percent of the mule deer snow interception cover was located in the non-THLB. According to the MoE staff, no cover areas have been located in the non-THLB to date.

The timber supply is most constrained from 2024 to 2064. This period corresponds to the transition between existing mature and existing regeneration. Sensitivity analysis to show the effect on timber supply of increasing snow interception objectives for the THLB by ten percent indicated a 0.8 percent decrease in the short term. When the snow interception cover was decreased by ten percent, short-term harvest levels increased by 0.5 percent. There was no impact for either case in mid- or long-term harvest level.

2. Big Horn Sheep

In the LRMP, the objective in the Big Horn Sheep (BHS) RMZ is to provide adequate forest cover to meet the thermal, snow interception and security requirements for sheep. In sheep habitat, 33 percent of the stand is to be maintained to a height of 16 metres or greater, which may include problem forest types but not stocking class 4. In the base case, the licensee assumed that no less than 33 percent of the stands on the forested land base could be less than 60 years of age (the area weighted age to reach 16 meters in height).

3. Elk habitat

The LRMP states that the objectives and strategies identified for the Mule Deer Winter Range RMZ will provide adequate management for elk winter habitat.

I have reviewed the assumptions applied in the base for the management of wildlife. I am satisfied that the base case adequately accounts for the strategies detailed in the Okanagan Shuswap LRMP for BHS and Elk. However for MDWR, at this time no information was provided to predict the impacts of locating MDWR in stands greater than 175 or 140 years old in the THLB. On this account, I consider the timber supply in the base case to be overestimated in the short and mid term by an unknown amount. I will discuss this further under 'Reasons for decision'.

Identified wildlife

Identified wildlife refers to species at risk (red- and blue-listed) as well as regionally significant species that are potentially affected by forest management activities and that have not been adequately accounted for through existing management strategies. While the biodiversity and riparian provisions of the *Forest Practices Code* are intended to provide for the needs of most wildlife species, some species that are considered to be "at risk" require special management practices.

The Province's *Identified Wildlife Management Strategy Version 2004* (IWMS) — released in June 2004 — replaces IWMS Volume 1 and contains an updated list of identified wildlife, updated species accounts, and updated procedures for implementation. IWMS provides mechanisms for managing critical habitat for identified wildlife species including Wildlife Habitat Areas (WHAs), General Wildlife Measures (GWMs), and other management practices consistent with higher level plans. Government has limited the impact of management for identified wildlife in the short term to a maximum of one percent of the harvest level for the province.

In December 2004, the Minister of (the former) WLAP approved wildlife objective notices under Section 7 of the *Forest Planning and Practices Regulation* for all Forest Districts in British Columbia for both species at risk and ungulate species. All forest licensees need to prepare results or strategies in their forest stewardship plans that are consistent with the wildlife objective in Section 7.

When MP No.9 became effective August 1, 2004, no WHAs were established within TFL 15. In December 2004, WHA 8-017 was approved, which provides 19 hectares for the white-headed woodpecker. Approximately 5 hectares are in the THLB.

In May 2005, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) rated the William's sapsucker as endangered. MoE staff suggest that this species will likely be included in IWMS 2005. Nest sites have been identified on the TFL. In addition, a WHA for the flammulated owl is proposed and one tiger salamander WHA is under review; however, this latter species is in the Ponderosa Pine zone and MWLAP staff expect it to have little effect on timber supply.

The Okanagan Shuswap LRMP recommended a one percent area reduction to TFL 15 for 'identified wildlife' and other rare species. No accounting for WHAs was included in the base case because, as mentioned above, at the time the MP No. 9 and the analysis were being prepared, no WHAs had been established on the TFL.

MOFR FAIB staff note that the one percent reduction is a provincial average and is not automatically applied in timber supply analysis. Furthermore, accounting for Wildlife Tree Patches (WTPs) or Old Growth Management Areas (OGMAs) often offset additional removals for identified wildlife.

I have reviewed the information on wildlife habitat areas. The LRMP recommended that on average, the THLB be reduced by one percent in anticipation of WHAs being established on TFL 15. This reduction is not automatic and given the uncertainty about the possible impacts, I believe that a reduction of less than one percent would be an appropriate contingency for this factor at this time. This factor should be re-examined at the next TSR when progress has been made in WHA designation. I will discuss this further under 'Reasons for decision'.

Wildlife tree patch reductions

In the Forest Development Plan, 115.7 hectares (net) – 118.7 hectares (gross) of Wildlife Tree Patches (WTPs) were identified and these were excluded from the THLB.

The licensee undertook an analysis to determine the amount of future WTPs that would be required to meet objectives stated in the Landscape Unit Planning Guide. A 250-metre buffer (effective WTP area-of-influence) was applied to all forested polygons not in the THLB (e.g. WTP, OGMA, riparian reserves, and deciduous forest types). A GIS was used to generate points representing the theoretical location of all WTPs across the TFL. The majority of the 1281 points identified fell within the buffered area. The remaining 394 points were potential locations of future WTPs outside the buffered zone. The licensee estimated the current average WTP size to be 0.5 hectares. Thus, future WTPs would cover 197 hectares or 0.46 percent of the THLB. For the analysis, this area reduction was assumed to be equivalent to a 0.46 percent volume reduction and removed from all yield tables used in the base case.

The former MWLAP staff indicated that in the Okanagan – Shuswap Forest District a nine-percent area reduction for WTPs is currently applied, of which 50 percent may come from the THLB. Under this scenario, 1562 hectares would be identified, which is well above the estimate derived by the licensee.

I have reviewed the methods and assumptions used to account for WTPs in the base case and consider the licensee's estimates to be an initial approximation, while they continue to evolve their silviculture era 3 prescriptions and confirm which other retained areas can be used to contribute for multiple objectives. However, I do not expect WTP requirements to be fully met through these means, and I do expect some additional short-term reductions in timber supply, not as yet quantified, at this stage in the determination. I will discuss this further under 'Reasons for decision'.

(vi) any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber;

I have reviewed the information presented on the twenty-year plan and the Okanagan Shuswap Land and Resource Management Plan, and conclude that they are adequately reflected in the base case. Pubic review and First Nation interests are discussed below.

Public Review

The draft MP No.9 was available for review and comment from March 28 to April 9, 2003. A list of agencies, public and stakeholders contacted are included in Appendix 15 of MP No.9. Other than input from agency staff, one person, a trapper, provided input. He favoured using stand density to manage forest attributes and wanted to see emphasis on connectivity.

Currently, the Southern Interior Forest Region's Regional Executive Director is determining the maximum allowable density in regenerating stands. The LRMP addresses the importance of connectivity and provides for managing the OGMA budget and planning for the maintenance of functional connectivity for the movement of plants and animals at the regional landscape and stand level. The District has allowed unburned piles and windrows away from roads and the licensee has been implementing this practice, which should alleviate the trapper's concerns by providing habitat and connectivity for small mammals.

In reviewing the current management initiatives in TFL 15, I am satisfied that the management practices that were modeled in the base case will be sufficient to address public concerns about stand density and connectivity.

First Nations Interests

TFL 15 lies within the asserted traditional territory of the Okanagan Nation (represented by the Okanagan Nation Alliance). The licensee began the information sharing process with First Nations regarding MP No.9 on October 22, 2002. The licensee sent a letter to the District Manager requesting any strength of claim assessment information and the list of First Nations with aboriginal interests on the TFL and, on the same date, sent a letter to the Osoyoos Indian Band, the resident member Band of the Okanagan Nation Alliance.

On November 14, 2002, the licensee sent a fax to the Osoyoos Indian Band to set up a meeting with the Band to discuss its interests and how MP No.9 may affect them. During November and December 2002, the licensee made several phone calls to the Osoyoos Indian Band attempting to set up a meeting. In these phone conversations, the Band indicated it is interested in economic and traditional uses of the land as well as setting up a co-operative agreement for a post-and-rail operation on the TFL. In January 2003, further attempts were made by the licensee to set up a meeting. In the ensuing discussions, the Band expressed its dissatisfaction with the process and indicated again its interest in post and rail harvesting. In early February 2003, the licensee and the Band briefly discussed the 6000-cubic-metre harvest level attributed to stocking class 4 stands. The Band then indicated that it would respond jointly with the Okanagan Nation Alliance and that all correspondence regarding licence renewals and requests for input into Forest Development Plans and MPs be forwarded to the Alliance. In a letter dated February 14, 2003, the licensee reminded the Osoyoos Indian Band of the statutory deadlines in the management planning process and its desire to have input from the Band.

On June 12, 2003, the licensee sent the timber supply analysis information package and a covering letter to the Osoyoos Indian Band. In the covering letter, the licensee reiterated the desire for Band input. The Timber Supply Analysis and the twenty-year plan were sent to the Osoyoos Indian Band on November 24, 2003. In the covering letter, the licensee again expressed its desire to have the band provide input and offered to meet with the band. On March 23, 2004, the licensee sent the draft MP No. 9 to the Osoyoos Indian Band and in the covering letter reiterated its desire to continue discussions with the Band.

The licensee received no feedback on the information package or the analysis from the Osoyoos Indian Band or the Okanagan Nation Alliance. The licensee's information–sharing process for the preparation and development of all the documents culminating in the Proposed Management Plan No. 9 are described in a separate letter submitted to the Regional Manger in March 2004.

On March 1, 2005, the Okanagan Shuswap Forest District sent a letter to the Osoyoos Indian Band and the Okanagan Nation Alliance summarizing the consultation process that had taken place to date. The District offered to meet with the Band and asked for a response, within 60 days, identifying any aboriginal interests likely to be affected by the AAC determination. A copy of the letter was sent to the Okanagan Nation Alliance. District staff followed–up with an email on March 9, 2005 and a phone call on March 22, 2005 to the Band and its consultant. No information was received from the Osoyoos Indian Band or the Okanagan Nation Alliance within 60 days.

I note that the licensee has contracted harvesting activities on TFL 15 to the Osoyoos Indian Band. I also note that the Osoyoos Indian Band is interested in a post and rail operation and I urge the licensee to continue to discuss these economic opportunities with the Band. I further expect that the licensee and district staff consider the Osoyoos Archaeology Inventory Study, 2000, in preparation, review and approval of operational plans.

As I have noted in my *Guiding principles*, the AAC that I determine should not in any way be construed as limiting the Crown's legal obligations as described in court decisions with respect to First Nations consultation regarding aboriginal interests. The AAC that I determine does not prescribe any particular plan of harvesting activity within the TFL by requiring any particular area to be harvested or not harvested.

As I make my AAC determination, I am mindful of the responsibility of other statutory decision-makers to administer the AAC in a manner consistent with other legislation and relevant decisions of the courts respecting the interests of First Nations.

I acknowledge the licensee's commitment in MP No. 9 to support and assist the Crown in carrying out its consultation and where appropriate accommodation obligations. No specific concerns affecting timber supply, such as significant cultural sites, have been raised to date. Should specific information on aboriginal interests becomes available during the term of this determination, I will consider it in the next AAC determination. In the meantime, I encourage continued consultation with First Nations on operational decisions to enable design and timing of forest operations to consider and where appropriate, address First Nations' interests.

(b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area;

Alternative harvest flows

The nature of the transition from harvesting old-growth forests to harvesting second-growth forests is a major consideration in determining AACs in many parts of the province. In the short term, the presence of large timber volumes in older forests often permits harvesting above long-term levels without jeopardizing future timber supply. In keeping with the objectives of good forest stewardship, AACs in British Columbia have been and continue to be determined to ensure that current and mid-term harvest levels will be compatible with a smooth transition toward the usually (but not always) lower long-term harvest level. Thus, timber supply should remain sufficiently stable so that there will be no inordinately adverse impacts on current or future generations. To achieve this, the AAC determined must not be so high as to cause later disruptive shortfalls in supply nor so low as to cause immediate social and economic impacts that are not required to maintain forest productivity and future harvest stability.

The licensee provided an alternative harvest flow based on the maximum initial harvest (74 000 cubic metre per year) that could be attained followed by a ten-percent-per-decade decline in harvest levels.

I have considered the alternative harvest flow analysis and I find it confirms the base case starting point. While higher initial harvest levels than the base case level could have been proposed, FAIB staff note that, based on the results of the alternative flow analysis, if any data or management assumptions are overestimated, short-term harvest levels would be at risk and mid-term supply potentially disrupted. In effect, this analysis confirmed that there is little or no capacity to absorb risk and uncertainty that would be associated with a higher initial harvest level.

Licensee's recommended option

According to the licensee, current practice related to patch-size distribution and retention on TFL 15 is in transition although field data reflecting these changes were not available for incorporation into the base case. As well, the licensee is in transition to using higher post harvest regeneration densities. The duration of the transition period will depend on the Southern Interior Regional Executive Director's determination on the maximum density levels.

To provide a measure of the likely effect on timber supply of these changes the licensee provided a harvest forecast that explored the effect on timber supply of increasing post harvest regeneration densities and modifying cut block size. For this forecast two MSYTs for lodgepole pine leading stands were replaced with MSYTs that encompass the range of site indices, establishment densities (15 000-35 000 stems per hectare), and post-spacing densities common on TFL 15. This forecast also incorporated assumptions to reflect the licensee's analysis of patch sizes resulting from operations on TFL 15 and its examination of 337 recent cut blocks (for the period 1992 to 2003) to assess the type and amount of retention on TFL 15. To account for these factors, the licensee did not apply the green-up and disturbance limits applied in the base case. All other performance and practice assumptions were identical to those applied in the base case.

There was no difference in short- to mid-term harvest flow compared to the base case, although there was a slight difference in harvest volume in the periods starting in 2094 and 2154. The behavior of all the other indicators was unchanged from the base case.

In considering the licensee's recommended option I note that the transition to the changed management regimes is not yet complete. I also note that the changes applied in the licensee's recommended option did not affect the short- and mid-term harvest level projected in the base case. I expect more information will be available for the next determination and any implications for timber supply resulting from changes in management regimes can be assessed at that time.

(c) the nature, production capabilities and timber requirements of established and proposed timber processing;

This section in the act was repealed in 2003. [2003-31-2 (B.C. Reg. 401/2003)].

(d) the economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia; and

Minister's letters and memorandum

The Minister has expressed the economic and social objectives of the Crown for the province in two documents to the chief forester—a letter dated July 28, 1994, (attached as Appendix 3) and a memorandum dated February 26, 1996, (attached as Appendix 4).

This letter and memorandum include objectives for forest stewardship, a stable timber supply, and allowance of time for communities to adjust to harvest-level changes in a managed transition from old-growth to second-growth forests, so as to provide for community stability.

The Minister stated in his letter of July 28, 1994, "any decreases in allowable cut at this time should be no larger than are necessary to avoid compromising long-run sustainability." He placed particular emphasis on the importance of long-term community stability and the continued availability of good forest jobs. To this end he asked that the chief forester consider the potential impacts on timber supply of commercial thinning and harvesting in previously uneconomic areas. To encourage this the Minister suggested consideration of partitioned AACs.

The Minister's February 26, 1999 memorandum addressed the effects of visual resource management on timber supply, asking that constraints applied to meet Visual Quality Objectives (VQOs) not be allowed to restrict timber supply unreasonably when determining AACs.

I have considered the contents of the letter and memorandum in my determination of an AAC for TFL 15. In this context, I believe that the approach the licensee has taken to modeling harvest levels based on a non-declining harvest flow will address the economic and social objectives expressed by the minister.

Local objectives

The Minister's letter of July 28, 1994, suggests that the chief forester should consider important social and economic objectives that may be derived from the public input in the timber supply review where these are consistent with government's broader objectives.

The licensee took a number of steps to provide opportunities for public review of draft MP No. 9 and the information package by advertising in local newspapers and making the documents available to the public. I have considered the input in this determination and commented on it in the relevant sections of this rationale.

Okanagan-Shuswap District staff have reviewed the licensee's public consultation process and confirm that the licensee satisfactorily met its public input obligations. I agree and conclude that no specific issues were identified in public review that would significantly alter the acceptability of the base case assumptions.

(e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

I have reviewed the information and assumptions presented on unsalvaged losses and conclude that they are adequately reflected in the base case. I will not discuss this further in this document.

Reasons for decision

In reaching my decision on an AAC for TFL 15, I have considered all the factors presented above and have reasoned as follows.

For the reasons stated in "Timber Supply Analysis", and from reviewing the considerations as recorded above, I accept the licensee's 'Base Case' as an adequate basis from which to assess timber supply for this AAC determination.

In the base case, the licensee made the decision to project an initial harvest level of 66 570 cubic metres per year, which is less than the current AAC of 70 000 cubic metres per year. The licensee has also elected the option of a non-declining flow for the next 80 years. Over this period, timber supply is critical for the first 20 years, as is maintaining the current merchantable timber supply over the 20-80 year period. Analysis shows limited flexibility to maintain the current AAC and significant risk of future harvest decline if it is set too high. The alternative rate of harvest analysis provided by the licensee highlights this potential risk.

In determining this AAC, I have identified factors that, considered separately, indicate that the timber supply may be either greater or less than that projected in the base case. Generally some of these factors can be quantified and their impacts assessed with some reliability. Others may influence timber supply by adding an element of risk or uncertainty to the decision but cannot be reliably quantified at the time of the determination. These latter factors are accounted for in determinations in more general terms.

In the determination for TFL 15, I have identified factors for which I believe the base case assumptions differ from current operational practices or conditions. These factors are summarized below.

I believe the treatment of one factor has underestimated timber supply in the base case, as follows:

- *Utilization standards* – a one percent yield increase was inadvertently omitted to account for a reduction in stump height from 30 to 25 centimetres for lodgepole pine, spruce and subalpine fir. As a result I conclude that timber supply is underestimated by less than one percent over the forecast period.

I believe the treatment of three factors have overestimated timber supply in the base case, as follows:

- *Identified Wildlife* – Wildlife Habitat Area (WHA) designation is an ongoing process. Since August 1, 2004 when MP No. 9 became effective, one WHA has been set aside for white-headed woodpecker. WHAs are proposed for flammulated owl, William's sapsucker and the grass-dwelling tiger salamander, but the area required has not been specified. Consistent with government's general direction for the province, the LRMP recommend a one-percent area reduction be applied for TFL 15 for 'identified wildlife'. This reduction is not automatic. Given the uncertainty about the possible impacts, I believe a reduction of less than one percent in projected timber supply over the forecast period would be appropriate for this factor, noting that it will be re-examined at the next TSR when further progress has been made in WHA designation.

- *Wildlife Tree Reductions* – Based on a review of existing WTPs mapped on the forest development plan and an analysis of possible future locations of WTPs, the licensee estimated that in total 312.7 hectares would be required to meet wildlife tree objectives described in the Landscape Unit Planning Guide. Former MWLAP staff indicate that within the Okanagan-Shuswap Forest District a nine-percent reduction for WTPs is currently supposed to be applied to the gross TFL area, 50 percent of which may come from the non-THLB -- a 1562-hectare reduction. The difference between these amounts is striking. District staff also expressed concerns that the licensee's estimate will not accommodate WTP requirements. I consider the licensee's estimate to be an initial approximation, while it continues to evolve its silviculture era 3 prescriptions and confirm which other retained areas can be used to contribute for multiple purposes. However, I do not expect requirements to be fully met through these means, and I do expect some additional downward pressure on short-term timber supply, not as yet quantified, at this stage in the determination.
- Mule Deer Winter Range – in the base case the licensee applied forest cover requirements to maintain stands aged 120 years and older for snow interception on the THLB in the MDWR RMZ. According to the LRMP, stands older than 175 or 140 years are to be maintained on the THLB. I therefore consider the timber supply in the base case to be overestimated in the short- and mid-term by a small but unknown amount.

Reviewing the three unquantified factors described above, I have considered as follows:

As I described above, analysis of alternative rates of harvest confirmed the risk to short-and medium-term timber supply resulting from changes in the initial harvest level. Based on these results, Forest Analysis and Inventory Branch staff confirmed that if any data or management assumptions were overestimated, short-term harvest levels would be at risk and mid-term supply potentially disrupted. In effect, the alternative flow analysis confirmed that there is little or no capacity to absorb risk and uncertainty that would be associated with too high an initial harvest level.

I acknowledge that in the base case there exists a slight under-estimate of approximately 0.5 percent in timber supply in the short term because the licensee did not account for reduced wastage from the lowering of stump height in the MSYTs. Balancing this, there is a slight over-estimate in the short term of approximately 0.5 percent because of losses to the THLB for wildlife habitat areas for Identified Wildlife Species. However, because I expect the wildlife tree retention requirements assumed in the base case to underestimate actual requirements and because the licensee did not reflect the recommendations of the LRMP in its assumptions concerning MDWR, I conclude that the base case overestimates short term timber supply by a small amount. I therefore believe that an appropriate harvest rate for TFL 15 at this time is 66 000 cubic metres per year, a reduction of 570 cubic metres from the initial harvest level projected in the base case.

Determination

I have considered and reviewed all the factors above, including the risks and uncertainties of the information provided. It is my determination that a timber harvest level that accommodates objectives for all forest resources during the next five years, that reflects current management practices as well as socio-economic objectives of the Crown, can be best achieved on TFL 15 by establishing an AAC of 66 000 cubic metres. This represents a reduction of 570 cubic metres from the base case and a 5.7 percent reduction from the current AAC.

This AAC does not include a partition. My determination includes the volume to be harvested in the 'Stocking Class 4 Zone' and acknowledges the licensee's past performance in undertaking a wide range of research projects and directed studies to address information gaps, which serves as a good example of using science to inform planning and management.
This determination is effective August 3, 2005 and will remain in effect until a new AAC is determined, which must take place within five years of the date of this determination unless the re-determination date is formally postponed according to the provisions of Section 8 of the *Forest Act*.

As stated in *Guiding Principles*, I re-iterate that my AAC determination does not prescribe where harvesting should or should not occur, nor does it prescribe who should harvest the timber. If additional significant new information is made available to me in respect of the management assumptions upon which I have predicated this decision, or First Nations' interests, then I am prepared to revisit this determination sooner than the five years required by legislation.

Implementation

In the period following this determination and leading to the subsequent determination, I encourage the licensee staff to undertake the tasks and studies noted below that I have also mentioned in the appropriate sections of this rationale document. I recognise that the ability to undertake these projects is dependent on the availability of staff time and funding. However, this work will be important to help reduce the risk and uncertainty associated with key factors that affect timber supply on TFL 15. I encourage the licensee to:

- Provide supplementary information that serves to validate the technique of adjusting yield tables to account for various reductions in land area, especially to show that both approaches would have the same effect on modeled timber flow.
- Undertake work to improve the inventory in order to reduce uncertainty, in particular volume estimates for existing stands, and preferably using the standard sampling methodology supported by MOFR FAIB, formerly with MSRM.
- Monitor the current practice of roadside harvesting to provide data to confirm the assumption that the non-productive area has decreased from 4.2 to 3 percent.

- Develop local site index estimates for interior Douglas-fir and spruce to reduce the uncertainty regarding the application of the provincial SI conversions.
- Monitor OAF 1 and 2 assumptions about forest health losses and the effects of management practices (e.g. stocking survey methods) and reflect these findings in the OAF assumptions for the next TSR.
- Monitor the impact of using natural regeneration rather than planting stock on the regeneration delay and include changes in assumptions in the next TSR.
- Continue to discuss economic opportunities to be implemented with the Osoyoos Indian Band.

Henry Benskin
A/Deputy Chief Forester

August 3, 2005

Appendix 1: Section 8 of the *Forest Act*

Section 8 of the Forest Act, Revised Statutes of British Columbia 1996, reads as follows:

8. Allowable annual cut

8. (1) The chief forester must determine an allowable annual cut at least once every 5 years after the date of the last determination, for

(a) the Crown land in each timber supply area, excluding tree farm licence areas, community forest agreement areas and woodlot licence areas, and

(b) each tree farm licence area.

(2) If the minister

(a) makes an order under section 7 (b) respecting a timber supply area, or

(b) amends or enters into a tree farm licence to accomplish a result set out under section 39 (1) (a) to (d),

the chief forester must make an allowable annual cut determination under subsection (1) for the timber supply area or tree farm licence area

(c) within 5 years after the order under paragraph (a) or the amendment or entering into under paragraph (b), and

(d) after the determination under paragraph (c), at least once every 5 years after the date of the last determination.

(3) If

(a) the allowable annual cut for the tree farm licence area is reduced under section 9 (3), and

(b) the chief forester subsequently determines, under subsection (1) of this section, the allowable annual cut for the tree farm licence area,

the chief forester must determine an allowable annual cut at least once every 5 years from the date the allowable annual cut under subsection (1) of this section is effective under section 9 (6).

(4) If the allowable annual cut for the tree farm licence area is reduced under section 9 (3), the chief forester is not required to make the determination under subsection (1) of this section at the times set out in subsection (1) or (2) (c) or (d), but must make that determination within one year after the chief forester determines that the holder is in compliance with section 9 (2).

(5) In determining an allowable annual cut under subsection (1) the chief forester may specify portions of the allowable annual cut attributable to

(a) different types of timber and terrain in different parts of Crown land within a timber supply area or tree farm licence area,

(b) different types of timber and terrain in different parts of private land within a tree farm licence area, and

(c) gains in timber production on Crown land that are attributable to silviculture treatments funded by the government of British Columbia, the federal government, or both.

(6) The regional manager or district manager must determine a volume of timber to be harvested from each woodlot licence area during each year or other period of the term of the woodlot licence, according to the licence.

(7) The regional manager or the regional manager's designate must determine a volume of timber to be harvested from each community forest agreement area during each year or other period, in accordance with

(a) the community forest agreement, and

(b) any directions of the chief forester.

(8) In determining an allowable annual cut under subsection (1) the chief forester, despite anything to the contrary in an agreement listed in section 12, must consider

(a) the rate of timber production that may be sustained on the area, taking into account

(i) the composition of the forest and its expected rate of growth on the area,
(ii) the expected time that it will take the forest to become re-established on the area following denudation,
(iii) silviculture treatments to be applied to the area,
(iv) the stand of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area,
(v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production, and
(vi) any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber,

(b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area,

(c) repealed,

(d) the economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia, and

(e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

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Appendix 2: Section 4 of the *Ministry of Forests Act*

Section 4 of the *Ministry of Forests Act* (consolidated 1988) reads as follows:

Purposes and functions of ministry

4. The purposes and functions of the ministry are, under the direction of the minister, to

(a) encourage maximum productivity of the forest and range resources in the Province;
(b) manage, protect and conserve the forest and range resources of the Crown, having regard to the immediate and long term economic and social benefits they may confer on the Province;
(c) plan the use of the forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are coordinated and integrated, in consultation and cooperation with other ministries and agencies of the Crown and with the private sector;
(d) encourage a vigorous, efficient and world competitive timber processing industry in the Province; and
(e) assert the financial interest of the Crown in its forest and range resources in a systematic and equitable manner.

Documents attached:

Appendix 3: Minister of Forests' letter of July 28, 1994

Appendix 4: Minister of Forests' memo of February 26, 1996

File: 10100-01

JUL 28 1994

John Cuthbert
Chief Forester
Ministry of Forests
595 Pandora Avenue
Victoria, British Columbia
V8W 3E7

Dear John Cuthbert:

Re: Economic and Social Objectives of the Crown

The *Forest Act* gives you the clear responsibility for determining Allowable Annual Cuts, decisions with far-reaching implications for the province's economy. The *Forest Act* provides that you consider the social and economic objectives of the Crown, as expressed by me, in making these determinations. The purpose of this letter is to provide this information to you.

The social and economic objectives expressed below should be considered in conjunction with environmental considerations as reflected in the Forest Practices Code, which requires recognition and better protection of non-timber values such as biodiversity, wildlife and water quality.

The government's general social and economic objectives for the forest sector are made clear in the goals of the Forest Renewal Program. In relation to the Allowable Annual Cut determinations you must make, I would emphasize the particular importance the government attaches to the continued availability of good forest jobs and to the long-term stability of communities that rely on forests.

Through the Forest Renewal Plan, the government is taking the steps necessary to facilitate the transition to more value-based management in the forest and the forest sector. We feel that adjustment costs should be minimized wherever possible, and to this end, any decreases in allowable cut at this time should be no larger than are necessary to avoid compromising long-run sustainability.

.../2

Province of
British Columbia

Minister of
Forests

Parliament Buildings
Victoria, British Columbia
V8V 1X4

In addition to the provincial perspective, you should also consider important local social and economic objectives that may be derived from the public input on the Timber Supply Review discussion papers where these are consistent with the government's broader objectives.

Finally, I would note that improving economic conditions may make it possible to harvest timber which has typically not been used in the past. For example, use of wood from commercial thinnings and previously uneconomic areas may assist in maintaining harvests without violating forest practices constraints. I urge you to consider all available vehicles, such as partitioned cuts, which could provide the forest industry with the opportunity and incentive to demonstrate their ability to utilize such timber resources.

Yours truly,

Andrew Petter
Minister

Province of British Columbia
Ministry of Forests
OFFICE OF THE MINISTER

MEMORANDUM

File: 16290-01

February 26, 1996

To: Larry Pedersen
Chief Forester

From: The Honourable Andrew Petter
Minister of Forests

Re: **The Crown's Economic And Social Objectives Regarding Visual Resources**

Further to my letter of July 29, 1994, to your predecessor, wherein I expressed the economic and social objectives of the Crown in accordance with Section 7 of the *Forest Act*, I would like to elaborate upon these objectives as they relate to visual resources.

British Columbia's scenic landscapes are a part of its heritage and a resource base underlying much of its tourism industry. They also provide timber supplies that are of significant economic and social importance to forest industry dependent communities.

Accordingly, one of the Crown's objectives is to ensure an appropriate balance within timber supply areas and tree farm licence areas between protecting visual resources and minimizing the impact of such protection measures on timber supplies.

As you know, I have directed that the policy on management of scenic landscapes should be modified in light of the beneficial effects of the Forest Practices Code. In general, the new policy should ensure that establishment and administration of visual quality objectives is less restrictive on timber harvesting. This change is possible because alternative harvesting approaches as well as overall improvement in forest practices will result in reduced detrimental impacts on visually sensitive areas. Also, I anticipate that the Forest Practices Code will lead to a greater public awareness that forest harvesting is being conducted in a responsible, environmentally sound manner, and therefore to a decreased public reaction to its visible effects on the landscape. In relation to the Allowable Annual Cuts determinations that you make, please consider the effects that the new policy will have in each Timber Supply Area and Tree Farm Licence.

.../2

In keeping with my earlier letter, I would re-emphasize the Crown's objectives to ensure community stability and minimize adjustment costs as the forest sector moves to more value-based management. I believe that the appropriate balance between timber and visual resources will be achieved if decisions are made consistent with the ministry's February 1996 report *The Forest Practices Code: Timber Supply Analysis*.

Finally, in my previous letter I had asked that local economic and social objectives be considered. Please ensure that local views on the balance between timber and visual resources are taken into account within the context of government's broader objectives.

Andrew Petter
Minister of Forests